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ABSTRACT

With accurate information, educators are better able to make effective decisions. Besides being used to assess student performance, a complete program of data collection and use can also show educators how management skills, individual learning styles, and other elements affect student achievement. This digest provides an overview of how collecting data on student learning in a timely and accurate manner can be used to improve schools. It discusses the role of data in improving education, the types of data that should be collected, the role of teachers as researchers, the effective uses of data, and the steps that schools can take to improve their use of data. (Contains nine references.) (LMI)

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Data-Driven School Improvement

By James H. Johnson

Effective educators make effective decisions, decisions based on accurate information. If knowledge is power, then studying the current abilities, skills, attitudes, and learning styles of students empowers educators to adjust the curriculum to achieve whatever goals the school and district have chosen.

When educators study their schools and classes, they seek an answer to an ageless question: Is it good because we've been doing it for a long time, or is it good because we have tangible evidence of its worth (James McLean 1995)? In many instances one must conclude the former because no evidence exists to support the latter.

One solution is to collect data on student learning that are both timely and accurate.

Can Data Use Improve Education?

McLean contends that "implementation of a complete program of data collection and use can lead to the improvement of education as has no other educational innovation of the last century." Fundamental to this effort is equipping teachers and administrators with the skills and inclination to ask, "Is there a better way?"

Traditionally, data collected in schools have been used to assess student performance. But with the growing decentralization of power in most districts, educators are more likely to rely on data to help them

make better choices and uncover better ways of serving students and the community.

Educators routinely evaluate reading, writing, and math achievement, but they rarely assess management skills, individual learning styles, or other elements that may affect student achievement.

"We do the testing," said Marilyn Olson, of the Lane Education Service District, "and we get the individual student's scores back, but there's no concerted effort to interpret the data and work with them" (Johnson 1996).

Olson is currently involved with a project to create a database "that is consistent and accurate enough so that we can use it to make program changes." The goal is to enable educators to collect accurate information on students so they can make adjustments to teaching styles or curricula to gain measurable improvements. Students experiencing difficulty can be identified and helped earlier than is currently possible.

"Right now," Olson says, "we've got different teachers dealing with different data and they don't talk to each other, so a student slips through and no one recognizes the discrepancies in the student's data."

What Types of Data Should Be Collected?

Data are endemic in educational settings. As Richard Wallace (1996) reports, "School districts usually gather much more data than they can effectively use." The challenge is to analyze the information and use it wisely. Many believe the logical starting point is to make bet-

ter use of existing or archival data (Wallace, Emily Calhoun 1994, McLean). These data include statistics on attendance, grades, referrals, retentions, and standardized-test results. When compiled and reported on a regular basis, archival data provide a baseline of school operations and can be used to make comparisons among similar schools.

With minimal effort, these data can often be disaggregated or broken down. Often done by grade, gender, race, or socioeconomic background, disaggregation can reveal previously unrecognized patterns that, in turn, may suggest areas in need of improvement.

With varying degrees of effort, other classes of data can be collected. Examples include survey results, interviews, numbers of books read, and other information on student achievement. These data typically require development of a means to collect and analyze the information (Calhoun). Data that may be more difficult to collect and interpret objectively include evaluations of student work, such as portfolios and exhibitions.

Should Teachers Serve as Researchers?

Traditionally, educational researchers have been the ones to proclaim various educational practices as either effective or ineffective. Principles of effective instruction are often drawn from large-scale studies.

However, teachers do not work in large-scale, static settings. They face unique sets of students who respond variably to different strategies. Hence applying academic research findings to individual classrooms



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can be problematic.

One alternative to overreliance on the findings of large-scale studies is for educators to assume the role of researcher. By studying their students, teachers can bring the academic findings down to earth, as it were, and discover what works in their specific classroom.

Susan Black (1996) equates teacher research to the work done by anthropologists or ethnographers. "They are able to observe the cultural scene closely. . . and create a research record of the people, places, events and objects within it, as well as their own personal interactions and responses." By using the classroom as laboratory, teachers can, for example, learn whether interdisciplinary teaching is as effective with their remedial students as with their high achievers.

Research conducted by teachers differs from academic research (Black). First, academic researchers strive for objectivity, keeping the subjects of their study at arm's length. Teachers, in contrast, maintain a close relationship with the objects of their study. Academics try to design and control events under study while teachers observe activities as they occur in the real world, namely their classes. Finally, traditional researchers seek to globalize results while teachers know that their findings apply only to the students in their classes.

Such small-scale studies are often termed *action research*, because the teacher-researcher takes action based on the results of his or her findings. The research may be formal or informal, short- or long-term. But it is based on the understanding that the results are collected from a set of students and the action is applied to those same students (Calhoun, Molly Watt and Daniel Watt 1991).

How Can Data Be Used Effectively?

In any organization, those who possess information typically exer-

cise a degree of power or control over those who don't. How information is to be used will affect how data-collection initiatives are perceived and then implemented.

Data can be used to judge people's performance and take punitive action against underachievers, or it can be used to diagnose problems and determine the efficacy of solutions.

Principals' "willingness to provide opportunities for information acquisition. . . may be tempered by their competitive notions of power which only impede the empowerment of teachers" (Peggy Kirby and Ira Bogotch 1989).

The concept of continuous improvement should be stressed. "Each data-collection cycle and its results should not be thought of as an activity with a grade. . . it should be thought of as information on the progress being made toward attaining the collective goal and to assist all members of the organization as they make decisions for current and future action," states Calhoun.

Choosing a specific area of focus is also crucial. Through consultation with other staff members, whether formally or informally, the researcher needs to select a well-defined set of objectives. The data-collection cycle and subsequent action steps should be designed to address these needs. When goals of the improvement effort are clearly defined, teachers, staff, and the community will be more likely to understand and support the initiative.

What Steps Can Schools Take To Improve Their Use of Data?

Most researchers suggest that a logical first step in using data is to begin making better use of existing data. A systematic analysis of data that are already being collected can reveal previously unseen patterns and opportunities for improvement. More inventive data sources require greater efforts to collect and interpret them.

Outside resources can support efforts to collect and analyze data effectively. For example, the Northwest Regional Educational Laboratory administers a variety of data-driven school-improvement programs that have been proven effective (Robert Blum, Kim Yap, and Jocelyn Butler 1992). One recent innovation is their "data in a day" program, wherein advisors, staff, and student volunteers select an area of focus in the morning, collect data, and present findings later the same day. The immediacy of the results and the involvement of a range of individuals often provide tangible benefits to everyone involved, especially the students.

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